

Technical Bulletin

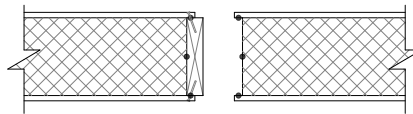
Wall Panel Design Charts (2x Lumber Splines) - NBC of Canada 2005

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This bulletin provides wall panel design loads for the Insulspan® Structural Insulating Panel (SIP) System when used as a wall system component designed in accordance with the **National Building Code of Canada 2005**. Insulspan has completed structural testing of the Insulspan SIP System for this application using a third party testing laboratory following the requirements of ASTM E72, **Standard Test Methods of Conducting Strength Tests of Panels for Building Construction**. For additional information, refer to Insulspan Technical Bulletin 107 which provides a copy Canadian Construction Materials Centre evaluation report 13016-R.

The attached **Wall Panel Design Load Charts** dated January 6, 2010 summarize design loads for wall panels using the Insulspan SIP System with 2x dimensional lumber joint configurations as noted.

- Table W-2-L – Transverse Wind Load (Single 2x Lumber Spline)



- Table W-3-DL– Transverse Wind Load (Double 2x Lumber Spline)

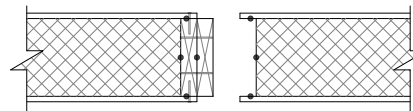


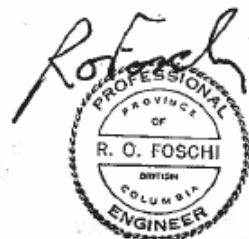
Table W-2-L WALL PANEL DESIGN LOAD

SINGLE 2x LUMBER SPLINE @ 4'-0" On Center															
Thickness		Allowable Deflection	PANEL SPAN (feet)												
SIP	EPS		8	9	10	11	12	13	14	15	16	17	18	19	20
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 0 plf															
4 1/2"	3 5/8"	L/360	30	25	20	17	15	-	-	-	-	-	-	-	-
		L/240	40	35	30	26	23	-	-	-	-	-	-	-	-
		L/180	52	46	40	35	30	-	-	-	-	-	-	-	-
6 1/2"	5 5/8"	L/360	63	50	38	32	26	23	20	17	14	12	11	9	8
		L/240	72	61	51	43	35	32	30	26	22	19	16	14	13
		L/180	72	61	51	45	39	38	38	33	29	25	22	19	17
8 1/4"	7 3/8"	L/360	97	82	67	55	44	38	32	28	24	21	18	16	14
		L/240	97	83	69	61	53	48	43	37	32	28	25	23	21
		L/180	97	83	69	61	53	48	43	39	35	32	30	29	28
10 1/4"	9 3/8"	L/360	116	101	87	77	68	59	51	44	38	33	29	26	23
		L/240	116	101	87	77	68	61	54	49	44	40	37	34	32
		L/180	116	101	87	77	68	61	54	49	44	40	37	34	32
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 1000 plf															
4 1/2"	3 5/8"	L/360	27	21	16	13	10	-	-	-	-	-	-	-	-
		L/240	36	30	25	20	15	-	-	-	-	-	-	-	-
		L/180	48	39	30	25	20	-	-	-	-	-	-	-	-
6 1/2"	5 5/8"	L/360	61	49	37	31	25	21	18	15	12	10	9	8	7
		L/240	72	61	51	43	35	30	26	22	19	16	14	12	10
		L/180	72	61	51	45	39	36	34	29	25	22	19	16	14
8 1/4"	7 3/8"	L/360	97	81	66	54	43	36	30	26	22	19	17	15	13
		L/240	97	83	69	61	53	48	43	37	32	28	25	22	19
		L/180	97	83	69	61	53	48	43	39	35	32	30	27	25
10 1/4"	9 3/8"	L/360	116	101	87	77	68	59	51	44	38	33	29	26	23
		L/240	116	101	87	77	68	61	54	49	44	40	37	34	32
		L/180	116	101	87	77	68	61	54	49	44	40	37	34	32
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 2000 plf															
4 1/2"	3 5/8"	L/360	-	-	-	-	-	-	-	-	-	-	-	-	-
		L/240	-	-	-	-	-	-	-	-	-	-	-	-	-
		L/180	-	-	-	-	-	-	-	-	-	-	-	-	-
6 1/2"	5 5/8"	L/360	48	38	28	22	16	12	9	7	6	-	-	-	-
		L/240	72	57	43	34	26	20	15	12	10	-	-	-	-
		L/180	72	61	51	43	35	28	21	17	14	-	-	-	-
8 1/4"	7 3/8"	L/360	94	77	60	49	39	33	27	23	19	16	14	12	10
		L/240	97	83	69	61	53	46	39	34	29	25	22	19	16
		L/180	97	83	69	61	53	48	43	39	35	32	29	25	21
10 1/4"	9 3/8"	L/360	116	101	87	77	67	56	46	39	33	29	25	22	19
		L/240	116	101	87	77	68	61	54	49	44	40	37	33	29
		L/180	116	101	87	77	68	61	54	49	44	40	37	34	32

Notes:

1. The tabulated values are design loads based upon design requirements of National Building Code of Canada 2005.
2. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
3. Insulspan SIP skins are nailed to the lumber splines at longitudinal panel joints, top and bottom plates using minimum 8d box nails @ 6" o.c. or equivalent.
4. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of CAN/ULC-S701, type 1.
5. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).
6. Acceptable 2x lumber for assembly with SIP panels is SPF #2 or better.

Reviewed By



Last Revision: January 6, 2010

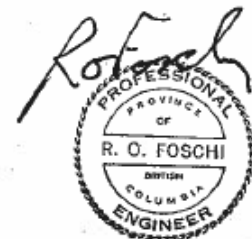
Table W-3-DL WALL PANEL DESIGN LOAD

DOUBLE 2x LUMBER SPLINE @ 4'-0" On Center															
Thickness		Allowable Deflection	PANEL SPAN (feet)												
SIP	EPS		8	9	10	11	12	13	14	15	16	17	18	19	20
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 0 plf															
4 1/2"	3 5/8"	L/360	37	29	22	18	15	12	10	-	-	-	-	-	
		L/240	51	40	30	25	20	17	15	-	-	-	-	-	
		L/180	63	50	38	32	26	23	20	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	92	73	55	45	36	30	25	21	18	15	13	11	10
		L/240	108	93	78	64	51	43	35	30	26	22	19	17	15
		L/180	108	93	78	68	59	52	45	39	33	29	25	22	19
8 1/4"	7 3/8"	L/360	138	118	98	81	65	54	44	38	32	28	24	21	19
		L/240	138	119	101	90	80	71	62	54	46	40	34	30	27
		L/180	138	119	101	90	80	71	62	56	51	46	42	38	35
10 1/4"	9 3/8"	L/360	170	148	126	111	96	85	74	64	54	47	40	35	31
		L/240	170	148	126	111	96	87	78	71	64	58	53	49	45
		L/180	170	148	126	111	96	87	78	71	64	58	53	49	46
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 1000 plf															
4 1/2"	3 5/8"	L/360	27	21	16	13	10	-	-	-	-	-	-	-	
		L/240	36	30	25	20	15	-	-	-	-	-	-	-	
		L/180	48	39	30	25	20	-	-	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	84	61	38	35	32	27	22	18	15	13	11	9	8
		L/240	108	79	51	49	48	40	33	28	23	20	17	15	13
		L/180	108	85	62	60	59	51	43	37	31	27	23	20	17
8 1/4"	7 3/8"	L/360	138	114	91	75	60	50	41	35	29	25	22	19	16
		L/240	138	119	101	90	80	70	61	52	44	38	33	29	25
		L/180	138	119	101	90	80	71	62	56	51	46	42	37	33
10 1/4"	9 3/8"	L/360	170	148	126	111	96	83	70	60	51	44	38	33	29
		L/240	170	148	126	111	96	87	78	71	64	58	53	48	43
		L/180	170	148	126	111	96	87	78	71	64	58	53	49	46
TRANSVERSE WIND LOAD (psf) with AXIAL LOAD = 2000 plf															
4 1/2"	3 5/8"	L/360	9	7	5	4	3	-	-	-	-	-	-	-	
		L/240	15	11	8	6	5	-	-	-	-	-	-	-	
		L/180	21	16	11	9	7	-	-	-	-	-	-	-	
6 1/2"	5 5/8"	L/360	70	49	28	26	24	19	15	12	10	8	6	6	6
		L/240	106	74	43	40	37	30	24	20	16	13	11	10	10
		L/180	108	85	62	56	51	42	33	27	22	18	15	14	14
8 1/4"	7 3/8"	L/360	138	111	84	67	50	43	37	31	26	22	19	16	14
		L/240	138	119	101	88	76	66	57	48	40	35	30	26	22
		L/180	138	119	101	90	80	71	62	56	51	45	40	35	30
10 1/4"	9 3/8"	L/360	170	148	126	110	95	80	66	56	47	41	35	30	26
		L/240	170	148	126	111	96	87	78	71	64	58	53	46	40
		L/180	170	148	126	111	96	87	78	71	64	58	53	49	46

Notes:

1. The tabulated values are design loads based upon design requirements of National Building Code of Canada 2005.
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3. Insulspan SIP skins are nailed to the lumber splines at longitudinal panel joints, top and bottom plates using minimum 8d box nails @ 6" o.c. or equivalent.
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